

Original Article

Assistive technology and occupational participation in adapted sports: perceptions of individuals with physical disabilities

Tecnología asistiva y participación ocupacional en deporte adaptado: percepciones de personas con discapacidad física

Tecnologia assistiva e participação ocupacional no esporte adaptado: percepções de pessoas com deficiência física

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Abstract

Introduction: The perception of individuals with physical disabilities regarding assistive technology influences their occupational participation in adapted sports. Despite its widespread use, there is a lack of awareness about the role it plays in the occupational participation of Para-athletes. **Objective:** To explore the perceptions of individuals with physical disabilities regarding the use of assistive technology in occupational participation in adapted sports. **Methodology:** A qualitative research was conducted, using a constructionist approach and a phenomenological design. Purposive sampling was employed. Data was obtained through the application of semi-structured interviews to four individuals with physical disabilities practicing adapted sports in Santiago, Chile. Content analysis was performed, considering the perceptions present in the collected messages from a hermeneutic perspective. **Results:** It is emphasized that assistive technology plays a crucial role in occupational participation in adapted sports. Additionally, various types of technologies used, experiences and perceptions in their use, socio-economic and access barriers, accessibility barriers, facilitators, and support in occupational participation, as well as the associated physical and psychological benefits, are identified. **Conclusion:** The importance of ensuring equitable access to assistive technology for the occupational participation of individuals with physical disabilities in adapted sports is emphasized. There is a need to address socio-economic and accessibility challenges to maximize the benefits of adapted sports

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for this group, through joint actions involving civil society, government, and healthcare professionals.

Keywords: Disabled Persons, Sports for People with Disabilities, Social Participation, Self-Help Devices, Occupational Therapy.

Resumen

Introducción: La percepción de las personas con discapacidad física sobre la tecnología asistiva influye en su participación ocupacional en el deporte adaptado. A pesar de su amplio uso, existe una falta de conciencia sobre el papel que desempeñan en la participación ocupacional de los paratletas. **Objetivo:** Explorar las percepciones de las personas con discapacidad física en relación con el uso de tecnología asistiva en la participación ocupacional en el deporte adaptado. **Metodología:** Se realizó una investigación cualitativa, con enfoque construccionista y diseño fenomenológico. Se empleó un muestreo intencional. Los datos se obtuvieron a través de la aplicación de entrevistas semiestructuradas a cuatro personas con discapacidad física que practican deporte adaptado de Santiago, Chile. Se realizó un análisis de contenidos, considerando las percepciones presentes en los mensajes recopilados desde una perspectiva hermenéutica. **Resultados:** Se enfatiza que la tecnología asistiva desempeña un papel crucial en la participación ocupacional en el deporte adaptado. Además, se identifican distintos tipos de tecnologías utilizadas, experiencias y percepciones en su uso, barreras socioeconómicas y de acceso, barreras de accesibilidad, facilitadores y apoyos en la participación ocupacional, así como los beneficios físicos y psicológicos asociados. **Conclusión:** Se destaca la importancia de garantizar un acceso equitativo a la tecnología asistiva para la participación ocupacional de personas con discapacidad física en el deporte adaptado. Se identifica la necesidad de abordar los desafíos socioeconómicos y de accesibilidad para maximizar los beneficios del deporte adaptado por este colectivo, desde acciones en conjunto de la sociedad civil, gubernamental y profesionales sanitarios.

Palabras clave: Personas con Discapacidad, Deportes para Personas con Discapacidad, Participación Social, Tecnología Asistiva, Terapia Ocupacional.

Resumo

Introdução: A percepção das pessoas com deficiência física sobre a tecnologia assistiva influencia sua participação ocupacional no esporte adaptado. Apesar de seu amplo uso, existe uma falta de consciência sobre o papel que desempenham na participação ocupacional dos paratletas. **Objetivo:** Explorar as percepções das pessoas com deficiência física em relação ao uso da tecnologia assistiva na participação ocupacional no esporte adaptado. **Metodologia:** Foi realizada uma pesquisa qualitativa, com abordagem construtivista e design fenomenológico. Foi utilizada uma amostragem intencional. Os dados foram obtidos por meio de entrevistas semiestructuradas com quatro pessoas com deficiência física que praticam esporte adaptado em Santiago, Chile. Foi realizado uma análise de conteúdo, considerando as percepções presentes nas mensagens coletadas de uma perspectiva hermenéutica. **Resultados:** Enfatiza-se que a tecnologia assistiva desempenha um papel crucial na participação ocupacional no esporte adaptado. Além disso, foram identificados diferentes tipos de tecnologias utilizadas, experiências e percepções em seu uso, barreiras socioeconômicas e de acesso, barreiras de acessibilidade,

facilitadores e apoios na participação ocupacional, bem como os benefícios físicos e psicológicos associados. **Conclusão:** Destaca-se a importância de garantir um acesso equitativo à tecnologia assistiva para a participação ocupacional de pessoas com deficiência física no esporte adaptado. Identifica-se a necessidade de abordar os desafios socioeconômicos e de acessibilidade para maximizar os benefícios do esporte adaptado para este grupo, por meio de ações conjuntas da sociedade civil, governo e profissionais de saúde.

Palavras-chave: Pessoas com Deficiência, Esportes para Pessoas com Deficiência, Participação Social, Tecnologia Assistiva, Terapia Ocupacional.

Introduction

Occupational participation is understood as the involvement in various areas of life, such as work, leisure and daily living activities, which make up the individual's sociocultural environment. These activities, whether desired or necessary for well-being, are carried out both individually and in interaction with others (Kielhofner, 2011).

From the occupational perspective adopted by occupational therapists, opportunities open up to promote occupational participation in physical activity and sport, and to address the problem of inactivity in people (Bullen & Clarke, 2020).

Physical inactivity contributes significantly to millions of deaths and generates high costs for health systems, affecting people with disabilities more severely (Hallal et al., 2013). These people face a higher risk of injuries, chronic non-communicable diseases and age-related health conditions. The health inequalities they experience are due to barriers in accessing health care, higher rates of unhealthy behaviors, and a lower probability of receiving health promotion and prevention services compared to people without disabilities (Marin Ginis et al., 2021).

It is imperative that occupational therapy professionals recognize the relevance of sport as a leisure occupation and integrate it into their future professional practices. This will significantly contribute to helping clients achieve physical, social, and mental health, as well as general well-being (Costalonga et al., 2020).

In particular, occupational participation in adapted sports activities plays a crucial role in the lives of people with physical disabilities. This approach not only promotes inclusion and equality, but also offers substantial benefits for the comprehensive development of those facing physical challenges (Kljajić et al., 2016).

According to the II National Study of Physical Activity and Sports Habits in the Population with Disabilities, carried out in Chile in 2020, it was observed that 60% of the population with disabilities reports being physically inactive. Meanwhile, only 14% is considered to be an active population, and 26% as partially active (Ministry of Sports of Chile, 2020). In this country, this practice is regulated by Law 20,978, which recognizes and defines adapted sport as an appropriate modality for people with disabilities, establishing specific rules and equipment to facilitate its practice (Chile, 2016).

Adapted sport is defined as that which is adjusted to the specific characteristics of participants with disabilities or particular health conditions, through modifications to

the rules and/or sports equipment, with the aim of facilitating its practice (Abellán et al., 2022). These modifications can cover aspects such as the regulations, the material used, technical-tactical adaptations and adjustments to sports facilities (Moya, 2014). In the context of Chile, these adaptations face different barriers that hinder the full participation of people with disabilities in adapted sport, such as accessibility in the physical spaces of sports venues, transportation, connectivity and the lack of knowledge and skills on the part of health personnel to meet the needs of users (Muñoz Hinrichsen et al., 2020).

Despite the existing barriers, adapted sport generates multiple benefits in psychological, social and physical terms. From a psychological perspective, aspects such as knowledge of personal limits, improved self-concept, attention and concentration capacity, release of aggression, stress and anxiety control stand out (Pérez-Tejero et al., 2012). Regarding social benefits, social interaction, learning teamwork, self-discipline, respect for others and competition are highlighted (Gould et al., 2023). In physical terms, an improvement and maintenance of physical condition, coordination and prevention of diseases related to lack of mobility are observed (Barbosa & Urrea, 2018).

On the other hand, assistive technology has emerged as a promising solution to overcome these barriers and improve occupational participation in adapted sport. Assistive technologies are tools designed to improve the functionality and participation of people with disabilities in different aspects of their lives and occupations (Normalización Española, 2023). These technologies include products, instruments, equipment or technical systems manufactured specifically for use by people with disabilities, with wheelchairs being one of the best known and most used resources by athletes with disabilities (Bragg & Pritchard-Wiart, 2019).

In addition to wheelchairs, there are other types of assistive technology that contribute to improving the quality of life of people with disabilities, such as prostheses, orthoses, postural positioning systems, augmentative and alternative communication systems, software systems, among others (Heredia et al., 2019). These technologies aim to reduce functional limitations and increase the autonomy of people with disabilities, allowing them to participate in leisure and sports activities (Marques & Alves, 2021).

In addition, it should be noted that there is a significant gap in access to these technologies worldwide. According to the Organización Mundial de la Salud (2023), only between 5% and 15% of people who require assistive technologies have access to them. This implies that many people with disabilities are limited in their daily activities, since only a fraction of them can benefit from these technologies, and they often have to pay by themselves or depend on charitable services.

Although assistive technology is widely used in adaptive sports, there is a lack of social and cultural awareness about the role that assistive technology plays in athletes with disabilities. Therefore, the aim of this research is to explore the perceptions of people with physical disabilities regarding the use of assistive technology in occupational participation in adaptive sport.

Method

In this research, a qualitative methodology was used to explore the perceptions of people with physical disabilities about the use of assistive technologies and their

influence on adapted sport. A constructionist approach was applied with the purpose of understanding the object of study from the individual's perspective (Valenciano, 2022).

In addition, a hermeneutic methodological approach was adopted, focusing on the experiences of people with disabilities who practice adapted sport. The importance of language was emphasized and the interpretations and meanings that these people attribute to a specific phenomenon were explored (Rojas et al., 2022). To achieve this, a phenomenological design was implemented that allowed a subjective and meaningful understanding of the perceptions of people with physical disabilities regarding the use of assistive technology in adapted sport. This approach was selected due to its exploratory nature, as it aims to investigate a limited topic in a particular context (Hernández Sampieri & Mendoza Torres, 2023).

The research was carried out in the commune of San Miguel, Santiago de Chile, and included the participation of national athletes with physical disabilities. For the selection of participants, the intentional theoretical sampling technique was used, which allows a careful and deliberate selection of the cases that best fit the objectives of the study and the established information needs (Bedregal et al., 2017).

Using this modality, four athletes were available and were contacted through a key informant, who generated a formal invitation to those who met the following eligibility criteria: having an acquired or congenital physical disability, being over 18 years old, having practiced adapted sports for more than 1 year, requiring the use of technical assistance to participate in the sport, and being an active member of an adapted sports club in Santiago de Chile, in addition to granting consent to participate. On the other hand, it was considered as an exclusion criterion that the participants presented significant communication or cognitive difficulties to develop the interview.

The people who decided to participate voluntarily provided their contacts, which were then given to the research team to coordinate semi-structured online interviews, a method of collecting information that is characterized by its adaptability, allowing interviewees to answer openly to a previous set of questions, thus avoiding the influence of specific answers and providing comfort and freedom to express their knowledge thanks to this flexibility (Kallio et al., 2016).

The interviews lasted 90 minutes and were conducted in a single session via a videoconferencing platform. During the interviews, they were recorded using audio recordings and subsequently transcribed for analysis.

Once all the data was collected, a content analysis was carried out. This analysis included planning, recording, collecting, and coding or categorizing the collected data. An analytical interpretation was carried out based on the descriptions and narratives of the participants' experiences, using their arguments to validate the study's findings (Alegre Brítez, 2022).

Finally, the key ethical and social aspects in the research were: social value, scientific ethics, equitable selection, risk-benefit ratio, informed consent, right to withdraw, confidentiality, monitoring of well-being, and knowledge of the results (Seneviratne, 2023).

Results

As study participants, four athletes who participate in the adapted sports club in the commune of San Miguel, Santiago de Chile, were recruited. They have the following characteristics (Table 1).

Table 1. Characterization of the participants.

Participants	Age	Gender	Type of disability	Disability eligible for adapted sport	Sport experience	Linkage (type of sport)	Assistive Technology
Participant 1	25 years old	Male	Acquired	Muscle weakness. Hypertonia	1 year	Wheelchair basketball and wheelchair handball	Sports wheelchair. Postural positioning system for the lower body.
Participant 2	37 years old	Male	Acquired	Muscle weakness	10 years	Wheelchair basketball	Sports wheelchair. Postural positioning system for the lower body.
Participant 3	29 years old	Male	Acquired	Muscle weakness	3 years	Wheelchair rugby	Sports wheelchair. Postural positioning system for the lower body. Adapted gloves.
Participant 4	39 years old	Male	Acquired	Muscle weakness	10 years	Wheelchair basketball and wheelchair handball	Sports wheelchair. Postural positioning system for the lower body.

The results obtained through the content analysis of the interviews revealed several key categories related to the perceptions of people with physical disabilities about the use of assistive technology in their occupational participation in adaptive sport. These emerging categories provide a deeper and more detailed understanding of the themes discussed by the participants. The identified categories are presented below: (1) types of technologies used by participants in adaptive sport, (2) experiences and perceptions of assistive technology in adaptive sport, (3) socioeconomic barriers in adaptive sport and access to assistive technologies in adaptive sport, (4) accessibility barriers in adaptive sport participation, (5) facilitators and supports in adaptive sport participation, (6) physical and psychological benefits in adaptive sport.

1. Types of assistive technology used by participants in adaptive sport.

In the context of adaptive sport, participants use different types of assistive technologies to overcome their limitations and fully participate in different sporting

activities. During the interviews, information was collected about the types of assistive technology used, as well as the reasons for using sports wheelchairs, postural positioning systems and grip facilitators.

Among the different technologies, the wheelchair emerges as the main assistive technology, as it is linked to narratives of personal transformation related to body mobility, feelings of freedom and security. In this regard, interviewee 4 mentions the following:

My sports wheelchair has been my constant companion for these ten years. At first, I didn't know how much impact it would have on my life, but now I can't imagine competing without it [...], it has been in every small achievement, when I tried it for the first time I was hooked, I felt free sitting on it, it was a new world for me. (Interviewee 4)

While interviewee 3 states:

The first time I tried the sports wheelchair, I felt free. I was able to move with an agility that I didn't think possible. It allows me to compete in Rugby without feeling limited. Every time I use it, I feel more confident and able to face any challenge on the field. (Interviewee 3)

These sports chairs often require custom adjustments to properly fit the specific needs of each athlete. The straps that come with the chairs are essential elements that also serve a postural support function. Interviewee 1 mentions that:

The straps are fundamental, [...] and that totally depends on the disability, since some people strap themselves more, there are people who are amputees, so they have much more mobility, so they need to strap themselves less [...] In my case, I made some adjustments to the sports chair for safety reasons, I use three straps to give me stability and because I have difficulty staying seated, this also helps me maintain a correct posture, which allows me to play better (Interviewee 1)

While interviewee 2 points out the following:

a strap to fit better in the chair, as if closer to the chair [...] the wheelchair has a velcro strap at the back so that your feet don't slip; towards the back plus the shoes, so that the feet don't move and besides that the knees, also so that they don't move to the sides, and a strap which is a belt that the chair has. (Interviewee 2)

Therefore, the process of customizing assistive technology, such as wheelchairs, is crucial to ensure that they are suitable for each athlete, taking into account the type of disability and the physical build of the athlete; mentioned by interviewee 2:

They ask you for the height of the backrest to match your level of spinal cord injury, they also ask you for the width of the seat; the height of the legs, and it is all a measurement to be able to make a sports chair. (Interviewee 2)

In addition to the wheelchair, there are complementary assistive technologies to improve the quality of play, interviewee 3 highlights the following:

The adapted gloves give me control and improve the grip of my wheelchair, so I jump to make impacts and blocks in the game. I feel invincible when I am well equipped (Interviewee 3)

It is important to highlight, from the experience of the study participants, that all these assistive technologies are acquired by external entities, such as the sports club to which the participants belong or through government projects aimed at adapted sports. According to interviewee 1:

At least that one was given to me by the club, let's say that the club has a number of chairs and they look for the most suitable ones (Interviewee 1)

This statement reveals that the sports club to which the athlete belongs is concerned with offering the necessary equipment so that the athletes can participate on equal terms and maximize their sporting performance. In addition, government projects also play an important role in the acquisition of assistive technologies. This is the case mentioned by interviewee 2 when he said:

I won a project at Mutual¹ where they are going to buy me my sports chair. (Interviewee 2)

While interviewee 4, along the same lines, says:

Finding financial support to get my equipment was an arduous task. Grants and donations have been essential, but there is always uncertainty about whether we will be able to continue obtaining these resources. (Interviewee 4)

These government projects aimed at adapted sport help provide athletes with disabilities with the tools and resources necessary for their participation and development in adapted sport.

2. Experiences and perceptions of assistive technology in adapted sport.

Assistive technology has had a great impact on adapted sport, providing unique opportunities and experiences for participants. Through the interview, it was possible to recapitulate perceptions about the use of these technologies, which provided a deeper understanding of their importance in the sports field. Interviewee 1 highlighted:

It makes things much easier for me because I drive a wheelchair all day long [...] my technical aid helps me a lot every day to perform in the sport I practice (Interviewee 1)

While interviewee 3 points out:

¹ Entity that provides health services to its members through a health system known as a "mutuality". Health mutual societies are non-profit organizations that operate under the legal framework of Law No. 16,744 (Chile, 1968) and are regulated by the Superintendency of Social Security in Chile.

Physically, I have gained strength and endurance. Psychologically, it has given me a great sense of achievement and has helped me overcome many personal challenges. Now I go everywhere alone, although it may seem unbelievable, this is my greatest achievement and I am proud of it. (Interviewee 3)

In these particular cases, it is stated that this tool has had a significant impact on their occupational performance in adapted sport and in their daily life. For them, this tool is of utmost importance for their daily mobility, both in their daily life and in their sporting practice.

From these narratives it is made clear that, without the wheelchair, their participation in sport would be extremely difficult or even impossible. This can be seen in the words of interviewee 1 where he comments:

Let's see, as super simple as I'm going to tell you. Without the chair I can't play. (Interviewee 1)

While interviewee 4 comments:

These technologies have improved my game, but it is frustrating to see how other athletes do not have access to them. The lack of resources and adequate financing limits the potential of many (...), I feel that by not having these aids many people lose feeling this freedom that I told you about. (Interviewee 4)

Based on these narratives, it is possible to affirm that the use of the wheelchair as an auxiliary instrument has significantly contributed to improving occupational performance and encouraging their participation in the field of daily life and adapted sport.

3. Socioeconomic barriers and access to assistive technologies in adapted sport.

People with disabilities face many barriers in their environment, which limit their optimal performance and participation in occupational activities. Among these barriers, one of the most common and on which the participants agree is the socioeconomic barrier. These barriers are external obstacles and, in many cases, difficult to overcome, since they do not depend exclusively on the person with a disability, but on the environment in which they are immersed.

From the point of view of the interviewees, they repeatedly mention the high cost involved in obtaining different assistive technologies for sports practice. In this regard, interviewee 3 points out:

Access to high-quality technology is expensive and not within everyone's reach. Despite the support of some organizations, the reality is that many athletes are excluded [...] In wheelchair rugby, the sheer cost of the chair puts you off doing the sport. Apart from being a specialized and expensive piece of equipment, the lack of financial support often restricts our sporting development. (Interviewee 3)

Following the same line of argument, interviewee 2 mentions

It's horrible because a sports wheelchair costs you a fortune [...] Without subsidies, many of us couldn't afford these luxuries, which limits our participation in the sport. (Interviewee 2)

While interviewee 1 also pointed out that:

Technical aids kill us because they are very expensive. (Interviewee 1)

Likewise, the interviewees emphasized that they can only use specialized wheelchairs needed to practice sports thanks to the help of their club and other social organizations, since they do not have the resources to acquire one themselves. This is evidenced by the words of interviewee 2:

As I told you, I have never bought a sports chair, [...] they are expensive, I would not pay two and a half million of Chilean pesos or three million of Chilean pesos, yes they would help me in the game, but I feel that it would not be worth it to pay so much money and I do not have access to it either. (Interviewee 2)

Complemented by what interviewee 1 points out:

With 109,000 Chilean pesos today you are lucky to buy groceries for a week. So, if you put yourself in the context of a 35-year-old person, with a child, who rents and wants to play sports, how are you going to do it? If you don't have the help of these foundations, like us. They couldn't. (Interviewee 1)

Both interviewees are aware that many other players face the same reality, which becomes a barrier present in their daily lives. It is essential to have the support of foundations, municipalities and/or the State to overcome these barriers. The interviewees emphasize the importance of receiving external help, since in addition to dealing with the high costs of assistive technology and the personal challenges associated with disability, they also lack the necessary State support. Interviewee 1 mentions:

The government has a Paralympic committee, which does not provide me with help. They can pay for your ticket, they can pay for your stay, but they don't pay for your technical assistance. (Interviewee 1)

This is added to levels of misinformation about the process, as pointed out by interviewee 4:

When I got into the world of Paralympic sport, I found a lot of misinformation. I didn't know where to go or who could help me [...]. My team and the sports community I am part of have been very supportive, but it is clear that we need more resources and opportunities to obtain the seats, we need a plan so that we all have access and not just for a lucky few. (Interviewee 4)

This is also complemented by the lack of support networks, since people with disabilities must go through different processes to obtain benefits related to the

acquisition of assistive technologies, and many times these are not granted, which forces them to look for other alternatives to continue participating in sports activities.

4. Accessibility barriers in participation in adapted sports.

The lack of accessibility is one of the most notable barriers and frequently pointed out by participants, referring to physical, sensory or social obstacles that hinder full and equal participation in various aspects of life, including sports practice. Interviewee 1 highlights the importance of this issue by mentioning:

Accessibility is the main thing that affects us. [...] something as simple as taking the subway. [...] the high subway [which has a gap at the entrance] we have to let it go because many of us cannot get on it. This limitation in the accessibility chain for people with disabilities is evident, especially in architectural designs, which significantly impacts participation in sports spaces. (Interviewee 1)

Transportation is also affected by this lack of accessibility, which affects attendance at training and matches. Interviewee 1 mentions:

There are many stations that don't have an elevator yet, so that's part of accessibility, it's already killing us from going out on a daily basis. (Interviewee 1)

Regarding sports facilities, Interviewee 3 points out the following:

There are few suitable sports facilities. Many places are not equipped to receive athletes with disabilities, which limits our training and competition opportunities. (Interviewee 3)

This poor adaptation in various environmental contexts limits the participation of people who practice adapted sports, causing annoying and demotivating moments from the experience of those interviewed. In this regard, interviewee 4 points out the following:

Not all gyms or courts are equipped to receive athletes with disabilities. It is frustrating to have to look for suitable places to train and compete [...]. Finding a suitable place to train has always been a challenge, we lose energy in that, it wears us out a lot. Many facilities are not adapted, and this limits our ability to prepare adequately for tournaments, we always have to beg for decent spaces. (Interviewee 4)

Interviewee 2 suggests a possible solution:

raising awareness, of course, I think that would be an option, with the authorities, in fact, I don't know, some journalists, presidents have gotten into wheelchairs, and they have realized that the streets (...) are not made for [traveling in] wheelchairs [...] (Interviewee 2)

This could create greater understanding and commitment to improve accessibility in cities and sports venues.

5. Facilitators and supports for participation in adapted sports.

Regarding the facilitators and supports that the interviewees describe as having a positive influence on sports participation, the following stand out: state funding for assistive technology, universal accessibility, adaptation of the sports environment, and social support.

Regarding state funding for assistive technology and adapted sports, the funds and projects provided by the State are considered, which offer significant support through financing of assistive technology for adapted sports. The interviewees mentioned the existence of programs such as the National Fund for Inclusive Projects (FONAPI in Spanish) of the National Disability Service (SENADIS in Spanish). Interviewee 1 highlighted that this program provides benefits, emphasizing when he mentions:

FONAPI, that helps us a lot. It is a SENADIS fund. They are given to foundations that have disabilities. (Interviewee 1)

With regard to accessibility in sports environments, the importance of universal accessibility and the modification of the physical environment in places of public importance is highlighted. The interviewees emphasize that adapting spaces for people with disabilities, so that they can participate and be included socially, is essential to encourage their participation in adapted sport. Universal accessibility provides an enabling environment for people with disabilities to feel safe and be included in sport and other social contexts, as mentioned by interviewee 1:

So the first thing is the environment and universal accessibility. If you give that to a person, that person will completely lose the fear of approaching or getting involved in a sport or in any context really, adding So any context that we have, universal accessibility [...] suits us very well, especially those of sports dependence. Let's say where I train we have adapted bathrooms, and that also helps us a lot, so inclusion for sports issues helps us a lot. (Interviewee 1)

This idea allows us to infer that the implementation of universal accessibility is key to favoring the occupational performance of athletes.

Finally, the role of social support networks in participation in adapted sports is mentioned. These networks include family, health professionals, friends and local organizations. In this regard, interviewee 4 mentions:

The support of my coaches and colleagues has been essential. In addition, organizations that promote adapted sports have provided me with resources and access to sporting events that I would not have had otherwise. (Interviewee 4)

The interviewees emphasize that having the support of these people and organizations provides security and confidence, since they feel supported and know that they have support in case of questions, doubts, fears or accidents. Collaboration and

mutual support between athletes with disabilities and the people around them contribute to the success of their participation in adapted sport.

It is relevant to highlight that the interviewees have emphasized the importance of creating a support network with professionals who provide them with the necessary tools for their optimal occupational participation. As mentioned by interviewee 1:

Then, you have my handball teacher, the kine², and there is X., who is an occupational therapist, so, you also felt comfortable and confident because you know that they will be there for you. You know that any questions, doubts, fears or in case of an accident they will be with you [...]. (Interviewee 1)

In addition, they have valued the support of their teammates, generating significant bonds, supporting each other and learning from each other. Interviewee 1 highlighted how this support in the team context was crucial as a rehabilitation process, narrating:

In the team context where I am, they helped me a lot, they waited for me in the subway, if I fell they helped me get up, they taught me how to get up, so it was like the main reason for entering the sport, it was a way of rehabilitation. (Interviewee 1)

It has also been observed that adapted sport has been a unifying factor between athletes and their families, strengthening their bonds and generating a sense of support and accompaniment. Interviewee 2 reported:

Before my accident, I couldn't sit down at the table with my family to eat with them because of the lifestyle I had. So, when sport came up and I saw that they supported me, that they went to the games, that they came to watch me, that they got excited, it was like the sport and the disability made me reunite with my family. (Interviewee 2)

6. Psychological and physical benefits of adapted sport.

Finally, information was collected based on the positive aspects that the interviewees mentioned about practicing any type of sport, which reflects a series of significant psychological and physical benefits. One of the most notable psychological benefits is the increase in self-confidence, as the first interviewee mentioned when he pointed out:

it gives you confidence, at least it helped me a lot because I started to show myself more. (Interviewee 1)

Furthermore, sport has been shown to be a useful therapeutic tool in the fight against depression, which shows evidence of its positive impact on the mental health of interviewee 1:

Getting out of depression also helps you a lot, I can say (Interviewee 1)

Complemented by what interviewee 3 said:

² Abbreviation of Kinesiologist

After the accident, I became a bit of a hippie. I decided to do whatever I wanted, to think about the present; with sport I have learned to put things into perspective. You can get out of everything. I learn more from defeats than from victories. (Interviewee 3)

Furthermore, sport generates a sense of belonging and confidence by being part of a group, as mentioned by interviewee 2 when talking about responsibility towards teammates in a team sport.

The responsibility to your teammates, to respond to them because it is a collective sport. (Interviewee 2)

This sense of community and camaraderie can have a significant impact on the emotional and social well-being of athletes. On the other hand, adapted sport also brings with it notable physical benefits, including disease prevention and improvements in general physical condition. As mentioned by interviewee 2:

It is said that it helps you a lot in the physical part and many go for that [...] and to prevent a lot of things like diseases. (Interviewee 2)

Complementing with words from interviewee 4:

Sport has allowed me to improve my physical and mental health. I have gained physical strength and great motivation, in addition to finding an incredible support community. (Interviewee 4)

Therefore, adapted sport brings with it different benefits, both psychological and physical, which are manifested in an improvement in the quality of life of the people who practice it, from the perspective of the participants of this study.

Discussion

The experiences and perceptions of the participants highlighted the significant role of assistive technology, especially the use of sports wheelchairs and postural support systems, which facilitate occupational participation in sports. This finding is consistent with the study by Bragg & Pritchard-Wiart (2019), who pointed out that the use of sports wheelchairs by people with disabilities is widely known and is frequently used with the aim of facilitating participation in sports activities. On the other hand, the use of straps or belts guarantees a safe experience and improves sports performance by stabilizing the trunk, being an element that facilitates the performance of sports activities, being consistent with what was stated in the study by Macciarola et al. (2023).

It should be noted that the adaptability and customization of assistive technology are important factors in the perception of Para athletes. This idea is developed in studies carried out by Soares et al. (2022), who propose a process of prescribing and monitoring customized assistive technology devices in Para-badminton, and Teixeira & Alves (2021), who address this topic in the context of wheelchair rugby.

Regarding the results that point to the financing of these assistive technologies, state support and financing initiatives that allow people with disabilities to afford the necessary assistive technologies were identified as facilitators, being the answer to the challenges of achieving equitable access and inclusive participation in sports for people with disabilities. These results have important practical implications, since Rotarou & Sakellariou (2017) point out that despite universal health coverage in Chile, people with disabilities face difficulties in accessing health services, which affects the availability of assistive technologies necessary for their use in various occupations.

These circumstances create a significant socioeconomic barrier to participation in adapted sports, causing many to rely on charitable services or alliances that they manage to obtain the necessary tools, many of which have high costs (Organización Mundial de la Salud, 2022).

In addition, accessibility barriers emerged as a crucial aspect that affects the full participation of people with disabilities in adapted sport. Participants emphasized the need for universal accessibility and modifications to sports and public spaces to promote inclusion and create a supportive environment.

Finally, the present study reveals the existence of significant barriers that hinder the full participation of people with disabilities in adapted sport, thus limiting their ability to experience full occupational participation. These barriers include limited access to assistive technologies and contextual barriers, findings that coincide with those proposed in the research by Jaarsma et al. (2016), who describe that the main barriers to participation in sports by people with physical disabilities are: high costs associated with participation, difficulty in finding a sport suitable for their needs, lack of information about available sports facilities, insufficient accessible transport options and lack of adaptation of courses and equipment.

Conclusion

This study provides insight into how people with physical disabilities perceive and experience the use of assistive technology in adaptive sport and how it affects their performance or occupational participation. The findings highlight the importance of assistive technology in overcoming physical barriers and encouraging sport participation. However, there are socio-economic and accessibility challenges that hinder access and inclusion, so state support, funding initiatives and improvements in universal accessibility are essential to achieve equitable participation in this population.

Occupational participation in adaptive sport offers both psychological and physical benefits, improving the overall well-being of people with disabilities. Facilitators and support networks, such as State-funded programmes and social support systems, play a crucial role in enabling participation and maximizing the benefits of adaptive sport.

This research highlights the need for policy makers, sport organizations and health professionals to address socio-economic and accessibility barriers, whilst strengthening facilitators and support networks. In this way, inclusive participation in adaptive sport will be promoted, improving both the physical and psychological well-being of people with disabilities.

Further research is encouraged to explore other factors that influence the perceptions and experiences of people with disabilities in relation to the use of assistive technology

in adaptive sport. Likewise, by constantly working towards inclusion and accessibility, society can create an environment where people with disabilities fully participate in sporting activities, experience personal growth and enjoy the numerous benefits that adaptive sport offers.

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Jusarah Bruna-Torres, Valentina Carrasco-Palacios, Valentina Lucero-Sánchez, Fernanda Molina-Pacheco conceived the text, organized the sources and/or analyzed, wrote the text, and proposed a version. Oscar Hernández-Lanas directed the research, made theoretical

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